

What is claimed is:

1. An image forming apparatus comprising:

an image forming unit including an image carrier disposed to be exposed to light to have a latent image formed thereon, an electrostatic charger that charges said image carrier to a predetermined polarity, a developing device that visualizes the latent image formed on said image carrier to form a visible image, and an endless belt onto which the visible image is transferred;

a plurality of image adjusting devices that adjust image forming conditions of said image forming unit, said image adjusting devices including a first image adjusting device and a second image adjusting device;

a detection pattern forming device that controls said image forming unit to form predetermined detection patterns on said endless belt;

a detecting device that detects the detection patterns formed on said endless belt and a quantity of reflection light from said endless belt; and

a correction device that corrects the detection patterns detected by said detecting device based on the quantity of reflection light from said endless belt detected by said detecting device;

wherein:

said first image adjusting device adjusts one of the image forming conditions of said image forming unit

based on the corrected detection result of the  
detection patterns;

said second image adjusting device adjusts another  
one of the image forming conditions of said image  
5 forming unit; and

said detecting device detects the quantity of  
reflection light from said endless belt in timing  
synchronous with the adjustment of the other one of the  
image forming conditions by said second image adjusting  
10 device.

2. An image forming apparatus according to claim  
1, wherein said detecting device detects density  
patches formed on said endless belt as the  
predetermined detection patterns, and said first image  
15 adjusting device adjusts the one of the image forming  
conditions of said image forming unit based on the  
detected density patches, to adjust density of an image  
to be formed.

3. An image forming apparatus according to claim  
20 2, wherein said first image adjusting device carries  
out one of image density control that maintains  
respective maximum densities of a plurality of  
predetermined colors constant and image density control  
that maintains gradation characteristics of halftone  
25 linear with respect to an image signal obtained by  
reading an image on an original.

4. An image forming apparatus according to claim

1, wherein said second image adjusting device comprises a device that rotates said endless belt, and a device that forms images on said endless belt at locations other than locations at which the predetermined  
5 detection patterns are formed.

5. An image forming apparatus according to claim 2, wherein said second image adjusting device comprises an image writing position adjusting device that adjusts a writing position for an image.

10 6. An image forming apparatus comprising:  
an image forming unit including an image carrier disposed to be exposed to light to have a latent image formed thereon, an electrostatic charger that charges said image carrier to a predetermined polarity, a  
15 developing device that visualizes the latent image formed on said image carrier to form a visible image, and an endless belt onto which the visible image is transferred;

a detection pattern forming device that controls  
20 said image forming unit to form predetermined detection patterns on said endless belt;

a detecting device that detects the detection patterns formed on said endless belt and a quantity of reflection light from said endless belt;

25 a correction device that corrects the detection patterns detected by said detecting device based on the quantity of reflection light from said endless belt

detected by said detecting device; and

an image adjusting device that adjusts at least one image forming condition of said image forming unit based on the corrected detection result of the

5 detection patterns;

wherein said detecting device detects the quantity of reflection light from said endless belt in timing different from timing in which the at least one image forming condition is adjusted by said image adjusting  
10 device.

7. An image forming apparatus according to claim 6, wherein said detecting device detects density patches formed on said endless belt as the predetermined detection patterns, and said image  
15 adjusting device adjusts the at least one image forming condition of said image forming unit based on the detected density patches, to adjust density of an image to be formed.

8. An image forming apparatus according to claim  
20 7, wherein said image adjusting device carries out one of image density control that maintains respective maximum densities of a plurality of predetermined colors constant and image density control that maintains gradation characteristics of halftone linear  
25 with respect to an image signal obtained by reading an image on an original.

9. An image forming apparatus according to claim

6, wherein the timing different from the in which the other one of the image forming conditions is adjusted is timing in which said endless belt is rotating and at a same time images are formed on said endless belt at  
5 locations other than locations at which the predetermined detection patterns are formed.

10. An image forming apparatus according to claim 1 or 6, wherein said endless belt is an intermediate transfer belt.

10 11. A program for controlling an image forming apparatus including an image forming unit including an image carrier disposed to be exposed to light to have a latent image formed thereon, an electrostatic charger that charges said image carrier to a predetermined  
15 polarity, a developing device that visualizes the latent image formed on said image carrier to form a visible image, and an endless belt onto which the visible image is transferred, the program comprising:

a detection pattern forming module for controlling  
20 said image forming unit to form predetermined detection patterns on said endless belt;

a first detecting module for detecting the detection patterns formed on said endless belt;

a second detecting module for detecting a quantity  
25 of reflection light from said endless belt; and

a correction module for correcting the detection patterns detected by said detecting module based on the

quantity of reflection light from said endless belt  
detected by said detecting module;

wherein:

said first image adjusting module adjusts one of  
5 the image forming conditions of said image forming unit  
based on the corrected detection result of the  
detection patterns;

said second image adjusting module adjusts another  
one of the image forming conditions of said image  
10 forming unit; and

said detecting module detects the quantity of  
reflection light from said endless belt in timing  
synchronous with the adjustment of the other one of the  
image forming conditions by said second image adjusting  
15 module.

12. A program for controlling an image forming  
apparatus including an image forming unit including an  
image carrier disposed to be exposed to light to have a  
latent image formed thereon, an electrostatic charger  
20 that charges said image carrier to a predetermined  
polarity, a developing device that visualizes the  
latent image formed on said image carrier to form a  
visible image, and an endless belt onto which the  
visible image is transferred, the program comprising:

25 a detection pattern forming module for controlling  
said image forming unit to form predetermined detection  
patterns on said endless belt;

a first detecting module for detecting the detection patterns formed on said endless belt;

a second detecting module for detecting a quantity of reflection light from said endless belt;

5 a correction module for correcting the detection patterns detected by said first detecting module based on the quantity of reflection light from said endless belt detected by said second detecting module; and

an image adjusting module for adjusting at least  
10 one image forming condition of said image forming unit based on the corrected detection result of the detection patterns;

wherein said second detecting module detects the quantity of reflection light from said endless belt in  
15 timing different from timing in which the at least one image forming condition is adjusted by said image adjusting module.

13. An image forming apparatus comprising:

an image forming unit including an image carrier  
20 disposed to be exposed to light to have a latent image formed thereon, an electrostatic charger that charges said image carrier to a predetermined polarity, a developing device that visualizes the latent image formed on said image carrier to form a visible image,  
25 and an endless belt onto which the visible image is transferred;

a detection pattern forming device that controls

said image forming unit to form predetermined detection patterns on said endless belt;

a detecting device that detects the detection patterns formed on said endless belt and a quantity of reflection light from said endless belt;

a correction device that corrects the detection patterns detected by said detecting device based on the quantity of reflection light from said endless belt detected by said detecting device; and

an image adjusting device that adjusts at least one image forming condition of said image forming unit based on the corrected detection result of the detection patterns;

wherein:

said image adjusting device includes an image writing position adjusting device that adjusts a writing position for an image; and

said detecting device detects the quantity of reflection light from said endless belt in timing different from timing in which the at least one image forming condition is adjusted by said image adjusting device, by detecting the quantity of reflection light upon turning-on of power of the image forming apparatus or in synchronism with the adjustment of the writing position for an image.